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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER	
RILEY, MARCUS T	

ART UNIT	PAPER NUMBER
2625	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No.	Applicant(s)	
	10/760,460	MIYAGI ET AL.	
	Examiner	Art Unit	
	MARCUS T. RILEY	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) *2,8 and 19* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1,3-7,9-18 and 20-23* is/are rejected.

7)☐ Claim(s) *22 and 23* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/08/2007; 05/01/2006;04/13/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 30, 2007 has been entered.

Response to Amendment

2. This office action is responsive to applicant's remarks received on May 7, 2008. **Claims 1, 3-7, 9-18 & 20-23** are pending. **Claims 2, 8 & 19** have been cancelled.

Response to Arguments

3. Applicant's arguments with respect to amended **claims 1, 3-7, 11, 13, 14, 17, 18, 20 & 21,** filed on May 7, 2008, have been fully considered but they are not persuasive.

A: Applicant's Remarks

Regarding the art rejections, the outstanding Office Action applied Matsumoto et al for an asserted teaching of an attribute determination unit that determines an image attribute of a first image signal on a pixel by pixel basis to generate an attribute signal indicating the image attribute. See Office Action, page 6, line 17, to page 7, line 5. However, there is no disclosure in

Matsumoto et al for the processing units defined in Claim 1 which 1) embed a black-character identification signal in the first image signal in a predetermined format to obtain a second image signal, 2) include in the second image signal the black-character identification signal and the dot identification signal, 3) extract the black-character identification signal from the second image signal, and 4) perform predetermined image processing on the second image signal stored, based on the black-character identification signal stored and the dot identification signal.

For instance, while Matsumoto et al describe at col. 2 to col. 5 various attribute and image information, there is no disclosure here of a black-character identification signal and a dot identification signal, much less the extraction of such information from an image signal and the further processing of image signals based on such extracted data.

M.P.E.P. § 2131 requires for anticipation that each and every feature of the claimed invention must be shown in as complete detail as is contained in the claim.

Accordingly, with the above-noted features not being disclosed or suggested in Matsumoto et al, independent Claims 1, 14, and 18 (and the claims dependent therefrom) are believed to patentably define over the art of record.

A: Examiner's Response

There is no disclosure in Matsumoto '125 in combination with Nakajima '437 for the processing units defined in Claim 1.

Regarding claim 1; Matsumoto '125 discloses an image processing apparatus, comprising: a communication unit configured to exchange data with an external device *("...and an output interface 78 consisting of a bidirectional interface for outputting information to an*

external device through communication means such as a network 79." column 6, lines 33-36); an attribute determination unit that determines an image attribute of a first image signal on a pixel by pixel basis to generate a dot identification signal and a black-character identification signal (*"As shown in FIG. 2, each image file (20) contains following components: (a) first attribute information (21) Summary information of the object image, including the format ID, title, producer, keyword, comment, final owner, revision number (number of times of savings of the object), total editing time, date and time of final print, date and time of original preparation, date and time of final storage, thumbnail attribute and application used for preparation..."* column 3, lines 11-21). See also (*"The image of each tile is memorized in a data format of JPEG compression, single color or non compression. The JPEG compression is an image compressing method of international standard defined by ISO/IEC JTC1/SC29. The single color is a data format, in case an entire tile is substantially composed of a single color, of representing the color of the tile by a single color instead of memorizing the individual pixel values. This data format is effective particularly for an image generated by computer graphics."* column 5, lines 53-61); an embedding unit that embeds the a black-character identification signal in the first image signal in a predetermined format to obtain a second image signal (*"A step S540 utilizes the obtained image data of the watermark information for mutual calculation with the image data of the object image in the real image space, thereby embedding the watermark information in the object image."* column 8, lines 40-44); a storage unit that stores the second image signal including the dot identification signal and the black-character identification signal, wherein the second image signal is transmitted to the external device through the communication unit (*"As shown in FIG. 2, each image file (20) contains following components: (a) first attribute*

information (21) Summary information of the object image, including the format ID, title, producer, keyword, comment, final owner, revision number (number of times of savings of the object), total editing time, date and time of final print, date and time of original preparation, date and time of final storage, thumbnail attribute and application used for preparation..." column 3, lines 11-21).

Matsumoto '125 does not expressly disclose an extractor that extracts the black-character identification signal from the second image signal; an image processor that performs predetermined image processing on the second image signal stored, based on the dot identification signal and black-character identification signal.

Nakajima '437 discloses an extractor that extracts the black-character identification signal from the second image signal (*"...setting means for setting an output device which is to carry out image output processing on the image data; image processing means for carrying out image processing, which corresponds to the attributes of the image data and to the output device which is to carry out image output processing,"* column 2, lines 29-34); and an image processor that performs predetermined image processing on the second image signal stored, based on the dot identification signal and black-character identification signal (*"...image processing means for carrying out image processing, which corresponds to the attributes of the image data and to the output device which is to carry out image output processing, on at least one of image data temporarily stored in the storing means and image data which is read from the storing means after the supplementary information has been added thereto and the image data has been temporarily stored in the storing means..."* column 2, lines 32-38).

Matsumoto '125 and Nakajima '437 are combinable because they are from same field of endeavor of an image processing system (*"The present invention relates to an image processing system..."* Nakajima '437 at column 1, lines 7-8).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the image processing system as taught by Matsumoto '125 by adding an extractor that extracts the black-character identification signal from the second image signal; an image processor that performs predetermined image processing on the second image signal stored, based on the dot identification signal and black-character identification signal as taught by Nakajima '437.

The motivation for doing so would have been to provide an image processing system in which high-speed processing and high quality of output images can be realized (*"...an object of the present invention is to provide an image processing system in which high-speed processing and high quality of output images can be realized."* Nakajima '437 at column 2, lines 17-20)

Therefore, it would have been obvious to combine Matsumoto '125 with Nakajima '437 to obtain the invention as specified in claim 1.

Accordingly, with the above-noted features being disclosed or suggested in Matsumoto '125 in combination with Nakajima '437, independent claims 1, 14, and 18 (and the claims dependent therefrom) are not patentably defined over the art of record.

Claim Rejections - 35 USC § 101

(The previous claims 19-21 rejections are withdrawn in light of the applicant's amendments.)

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claim 1, 5-7, 10-17 & 18-21** rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al. (US 6,647,125, hereinafter Matsumoto '125) in combination with Nakajima (US 6,650,437, hereinafter Nakajima '437).

Regarding claim 1; Matsumoto '125 discloses an image processing apparatus, comprising: a communication unit configured to exchange data with an external device *("...and an output interface 78 consisting of a bidirectional interface for outputting information to an external device through communication means such as a network 79."* column 6, lines 33-36); an attribute determination unit that determines an image attribute of a first image signal on a pixel by pixel basis to generate a dot identification signal and a black-character identification signal (*"As shown in FIG. 2, each image file (20) contains following components: (a) first attribute information (21) Summary information of the object image, including the format ID, title, producer, keyword, comment, final owner, revision number (number of times of savings of the object), total editing time, date and time of final print, date and time of original preparation, date and time of final storage, thumbnail attribute and application used for preparation..."* column 3, lines 11-21). See also (*"The image of each tile is memorized in a data format of JPEG*

compression, single color or non compression. The JPEG compression is an image compressing method of international standard defined by ISO/IEC JTC1/SC29. The single color is a data format, in case an entire tile is substantially composed of a single color, of representing the color of the tile by a single color instead of memorizing the individual pixel values. This data format is effective particularly for an image generated by computer graphics." column 5, lines 53-61); an embedding unit that embeds the a black-character identification signal in the first image signal in a predetermined format to obtain a second image signal (*"A step S540 utilizes the obtained image data of the watermark information for mutual calculation with the image data of the object image in the real image space, thereby embedding the watermark information in the object image."* column 8, lines 40-44); a storage unit that stores the second image signal including the dot identification signal and the black-character identification signal, wherein the second image signal is transmitted to the external device through the communication unit (*"As shown in FIG. 2, each image file (20) contains following components: (a) first attribute information (21) Summary information of the object image, including the format ID, title, producer, keyword, comment, final owner, revision number (number of times of savings of the object), total editing time, date and time of final print, date and time of original preparation, date and time of final storage, thumbnail attribute and application used for preparation..."* column 3, lines 11-21).

Matsumoto '125 does not expressly disclose an extractor that extracts the black-character identification signal from the second image signal; an image processor that performs predetermined image processing on the second image signal stored, based on the dot identification signal and black-character identification signal.

Nakajima '437 discloses an extractor that extracts the black-character identification signal from the second image signal (*"...setting means for setting an output device which is to carry out image output processing on the image data; image processing means for carrying out image processing, which corresponds to the attributes of the image data and to the output device which is to carry out image output processing,"* column 2, lines 29-34); and an image processor that performs predetermined image processing on the second image signal stored, based on the dot identification signal and black-character identification signal (*"...image processing means for carrying out image processing, which corresponds to the attributes of the image data and to the output device which is to carry out image output processing, on at least one of image data temporarily stored in the storing means and image data which is read from the storing means after the supplementary information has been added thereto and the image data has been temporarily stored in the storing means..."* column 2, lines 32-38).

Matsumoto '125 and Nakajima '437 are combinable because they are from same field of endeavor of an image processing system (*"The present invention relates to an image processing system..."* Nakajima '437 at column 1, lines 7-8).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the image processing system as taught by Matsumoto '125 by adding an extractor that extracts the black-character identification signal from the second image signal; an image processor that performs predetermined image processing on the second image signal stored, based on the dot identification signal and black-character identification signal as taught by Nakajima '437.

The motivation for doing so would have been to provide an image processing system in which high-speed processing and high quality of output images can be realized (*"...an object of the present invention is to provide an image processing system in which high-speed processing and high quality of output images can be realized."* Nakajima '437 at column 2, lines 17-20)

Therefore, it would have been obvious to combine Matsumoto '125 with Nakajima '437 to obtain the invention as specified in claim 1.

Regarding claim 5; Matsumoto '125 discloses wherein the predetermined image processing includes undercolor removal-black generation ("*A step S210 presets a color space in manual manner through the operation unit 73.A step S220 discriminates whether the color space of the entered image information coincides with the color space set in the step S210, and, in case of no coincidence, a step S230 executes the conversion of the color space."* column7, lines 44-49).

Regarding claim 6; Matsumoto '125 discloses where the predetermined image processing includes at least one of color correction, undercolor removal-black generation, gamma correction, pseudo-halftone processing, and filtering (*"A step S740 defines a single color tile if all pixels of the tile are of same data (or if only a very limited number of pixels is different in value) and the data format is defined as the single color attribute 3 (step S760). Any other tile is defined as a halftone tile, with the JPEG compression attribute 2 (step S750).* column 12, lines 44-49).

Regarding claim 7; Matsumoto '125 discloses where the second image signal is edited in the external device, the communication unit receives the second image signal edited from the

external device, the storage unit stores the second image signal edited, the extractor extracts the attribute signal from the second image signal edited, and the image processor performs predetermined image processing on the second image signal edited, based on the attribute signal extracted *("A step S2010 discriminates whether the data format is in the attribute 2, and, if so, a step S2020 executes block encoding. If the block encoding employs orthogonal transformation and quantization as in the JPEG encoding, the image is deteriorated by the non-reversible encoding. If the step S2020 identifies that the data format is not in the attribute 2, the data format is identified as in the attribute 3 and the representative value of the tile is extracted (step S2030)."* column 12, lines 59-67).

Regarding claim 10; Matsumoto '125 discloses a controller that controls whether to embed the attribute signal in the image signal in the embedding unit, depending on an image processing mode (*"A step S660 synthesizes the image data of the object image and the enciphered watermark information in the real image space, thereby embedding the watermark information into the object image.."* column 9, lines 8-11).

Regarding claim 11; Matsumoto '125 discloses where the storage unit stores the first image signal and the attribute signal, the embedding unit embeds the attribute signal in the first image signal stored in the storage unit in a predetermined format to obtain a third image signal, and the communication unit transmits the third image signal to the external device in which the dot identification signal is deleted and only the black-character identification signal is transmitted.{(*"As shown in FIG. 2, each image file (20) contains following components: (a) first attribute information (21) Summary information of the object image, including the format ID, title, producer, keyword, comment, final owner, revision number (number of times of savings of*

the object), total editing time, date and time of final print, date and time of original preparation, date and time of final storage, thumbnail attribute and application used for preparation..." column 3, lines 11-21). See also (*"A step S540 utilizes the obtained image data of the watermark information for mutual calculation with the image data of the object image in the real image space, thereby embedding the watermark information in the object image."* column 8, lines 40-44), and see (*"As shown in FIG. 2, each image file (20) contains following components: (a) first attribute information (21) Summary information of the object image, including the format ID, title, producer, keyword, comment, final owner, revision number (number of times of savings of the object), total editing time, date and time of final print, date and time of original preparation, date and time of final storage, thumbnail attribute and application used for preparation..."* column 3, lines 11-21)}.

Regarding claim 12; Matsumoto '125 discloses a resolution converter that converts a resolution of the attribute signal to a lower resolution (*"In the example shown in FIG. 21, the information are switched according to the tile position with the same hierarchic layer, in such a manner that same information is not present in mutually adjacent tiles. Also the kind and amount of the inserted information are made larger for the higher resolution level and smaller for the lower resolution level."* column 11, lines 4-9).

Regarding claim 13; Matsumoto '125 discloses wherein the black-character identification signal indicating a black character area. ("*A step S320 detects the attribute of the image of each of the divided tiles. For example a tile containing a character or a fine line is defined as a character/fine line tile; a tile containing relatively important information such as a human face is defined as an important tile; a tile of which all pixels are of same data (or if only a*

very limited number of pixels is different in value) is defined as a single color tile; column 7, lines 55-61).

Regarding claim 14; Matsumoto '125 discloses an image processing method, comprising: determining an image attribute of a first image signal on a pixel by pixel basis to generate an attribute signal indicating the image attribute (*"As shown in FIG. 2, each image file (20) contains following components: (a) first attribute information (21) Summary information of the object image, including the format ID, title, producer, keyword, comment, final owner, revision number (number of times of savings of the object), total editing time, date and time of final print, date and time of original preparation, date and time of final storage, thumbnail attribute and application used for preparation..."* column 3, lines 11-21). See also (*"The image of each tile is memorized in a data format of JPEG compression, single color or non compression. The JPEG compression is an image compressing method of international standard defined by ISO/IEC JTC1/SC29. The single color is a data format, in case an entire tile is substantially composed of a single color, of representing the color of the tile by a single color instead of memorizing the individual pixel values. This data format is effective particularly for an image generated by computer graphics."* column 5, lines 53-61); an embedding unit that embeds the attribute signal in the first image signal in a predetermined format to obtain a second image signal (*"A step S540 utilizes the obtained image data of the watermark information for mutual calculation with the image data of the object image in the real image space, thereby embedding the watermark information in the object image."* column 8, lines 40-44); storing the attribute signal and one of the first image signal and the second image signal, and transmitting the second image signal to an external device (*"As shown in FIG. 2, each image file (20)*

contains following components: (a) first attribute information (21) Summary information of the object image, including the format ID, title, producer, keyword, comment, final owner, revision number (number of times of savings of the object), total editing time, date and time of final print, date and time of original preparation, date and time of final storage, thumbnail attribute and application used for preparation…" column 3, lines 11-21); generate a dot identification signal and a black-character identification signal; embedding the black-character identification signal in the first image signal in a predetermined format to obtain a third image signal including in the third image signal the black-character identification signal and the dot identification signal; extracting at least one of the black-character identification signal and the dot identification signal from the third image signal performing predetermined image processing on the third image signal stored, based on the black-character identification signal stored and the dot identification signal (*"As shown in FIG. 2, each image file (20) contains following components: (a) first attribute information (21) Summary information of the object image, including the format ID, title, producer, keyword, comment, final owner, revision number (number of times of savings of the object), total editing time, date and time of final print, date and time of original preparation, date and time of final storage, thumbnail attribute, and application used for preparation; (b) second attribute information (22) General information on the object of storage, including the heater, user type, clipboard format etc.; (c) third attribute information (23) Information on the output image including the list of locked properties, image title after conversion, final editor, output image index, largest image index, largest conversion item index, largest operation index etc.; (d) Source image object (24) It consists of image information of the source image and attribute information thereof, as will be explained later; (e) Image object after conversion (25) It*

consists of image information and attribute information, obtained by applying a predetermined conversion process to the source image, and is structured similar to the source image object..." column 3, lines 11-29).

Matsumoto '125 does not expressly disclose extracting the attribute signal from the second image signal; performing predetermined image processing on one of the first image signal and the second image signal that are stored in the storage unit, based on at least one of the attribute signal stored and the attribute signal extracted.

Nakajima '437 discloses extracting the attribute signal from the second image signal (*"...setting means for setting an output device which is to carry out image output processing on the image data; image processing means for carrying out image processing, which corresponds to the attributes of the image data and to the output device which is to carry out image output processing,"* column 2, lines 29-34); performing predetermined image processing on one of the first image signal and the second image signal that are stored in the storage unit, based on at least one of the attribute (*"...image processing means for carrying out image processing, which corresponds to the attributes of the image data and to the output device which is to carry out image output processing, on at least one of image data temporarily stored in the storing means and image data which is read from the storing means after the supplementary information has been added thereto and the image data has been temporarily stored in the storing means..."* column 2, lines 32-38).

Matsumoto '125 and Nakajima '437 are combinable because they are from same field of endeavor of an image processing system (*"The present invention relates to an image processing system..."* Nakajima '437 at column 1, lines 7-8).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the image processing system as taught by Matsumoto '125 by adding extracting the attribute signal from the second image signal; performing predetermined image processing on one of the first image signal and the second image signal that are stored in the storage unit, based on at least one of the attribute signal stored and the attribute signal extracted as taught by Nakajima '437.

The motivation for doing so would have been to provide an image processing system in which high-speed processing and high quality of output images can be realized (*"...an object of the present invention is to provide an image processing system in which high-speed processing and high quality of output images can be realized."* Nakajima '437 at column 2, lines 17-20)

Therefore, it would have been obvious to combine Matsumoto '125 with Nakajima '437 to obtain the invention as specified in claim 14.

Regarding claim 16; Matsumoto '125 discloses converting a resolution of the attribute signal to a lower resolution. (*"In the example shown in FIG. 21, the information are switched according to the tile position with the same hierarchic layer, in such a manner that same information is not present in mutually adjacent tiles. Also the kind and amount of the inserted information are made larger for the higher resolution level and smaller for the lower resolution level."* column 11, lines 4-9).

Regarding claim 17; Matsumoto '125 discloses where the black-character identification signal indicating a black character area ("*A step S320 detects the attribute of the image of each of the divided tiles. For example a tile containing a character or a fine line is defined as a character/fine line tile; a tile containing relatively important information such as a human face is defined as an important tile; a tile of which all pixels are of same data (or if only a very limited number of pixels is different in value) is defined as a single color tile;* column 7, lines 55-61).

Regarding claim 18; Matsumoto '125 discloses a computer readable medium encoded with a program including computer executable instructions stored on a computer readable medium, wherein the instructions, when executed by the computer, cause the computer to perform: determining an image attribute of a first image signal on a pixel by pixel basis to generate an attribute signal indicating the image attribute; (*"As shown in FIG. 2, each image file (20) contains following components: (a) first attribute information (21) Summary information of the object image, including the format ID, title, producer, keyword, comment, final owner, revision number (number of times of savings of the object), total editing time, date and time of final print, date and time of original preparation, date and time of final storage, thumbnail attribute and application used for preparation..."* column 3, lines 11-21). See also (*"The image of each tile is memorized in a data format of JPEG compression, single color or non compression. The JPEG compression is an image compressing method of international standard defined by ISO/IEC JTC1/SC29. The single color is a data format, in case an entire tile is substantially composed of a single color, of representing the color of the tile by a single color instead of memorizing the individual pixel values. This data format is effective particularly for*

an image generated by computer graphics." column 5, lines 53-61); embedding the attribute signal in the first image signal in a predetermined format to obtain a second image signal; (*"A step S540 utilizes the obtained image data of the watermark information for mutual calculation with the image data of the object image in the real image space, thereby embedding the watermark information in the object image."* column 8, lines 40-44); storing the attribute signal and one of the first image signal and the second image signal; and transmitting the second image signal to an external device. (*"As shown in FIG. 2, each image file (20) contains following components: (a) first attribute information (21) Summary information of the object image, including the format ID, title, producer, keyword, comment, final owner, revision number (number of times of savings of the object), total editing time, date and time of final print, date and time of original preparation, date and time of final storage, thumbnail attribute and application used for preparation..."* column 3, lines 11-21); to generate a dot identification signal and a black-character identification signal; embedding the black-character identification signal in the first image signal in a predetermined format to obtain a third image signal including in the third image signal the black-character identification signal and the dot identification signal; extracting at least one of the black-character identification signal and the dot identification signal from the third image signal performing predetermined image processing on the third image signal stored, based on the black-character identification signal stored and the dot identification signal (*"As shown in FIG. 2, each image file (20) contains following components: (a) first attribute information (21) Summary information of the object image, including the format ID, title, producer, keyword, comment, final owner, revision number (number of times of savings of the object), total editing time, date and time of final print, date and time of original*

preparation, date and time of final storage, thumbnail attribute, and application used for preparation; (b) second attribute information (22) General information on the object of storage, including the heater, user type, clipboard format etc.; (c) third attribute information (23) Information on the output image including the list of locked properties, image title after conversion, final editor, output image index, largest image index, largest conversion item index, largest operation index etc.; (d) Source image object (24) It consists of image information of the source image and attribute information thereof, as will be explained later; (e) Image object after conversion (25) It consists of image information and attribute information, obtained by applying a predetermined conversion process to the source image, and is structured similar to the source image object..." column 3, lines 11-29).

Matsumoto '125 does not expressly disclose extracting the attribute signal from the second image signal; performing predetermined image processing on one of the first image signal and the second image signal that are stored in the storage unit, based on at least one of the attribute signal stored and the attribute signal extracted.

Nakajima '437 discloses extracting the attribute signal from the second image signal (*"...setting means for setting an output device which is to carry out image output processing on the image data; image processing means for carrying out image processing, which corresponds to the attributes of the image data and to the output device which is to carry out image output processing,"* column 2, lines 29-34); performing predetermined image processing on one of the first image signal and the second image signal that are stored in the storage unit, based on at least one of the attribute signal stored and the attribute signal extracted (*"...image processing means for carrying out image processing, which corresponds to the attributes of the image data and to*

the output device which is to carry out image output processing, on at least one of image data temporarily stored in the storing means and image data which is read from the storing means after the supplementary information has been added thereto and the image data has been temporarily stored in the storing means..." column 2, lines 32-38).

Matsumoto '125 and Nakajima '437 are combinable because they are from same field of endeavor of an image processing system (*"The present invention relates to an image processing system..."* Nakajima '437 at column 1, lines 7-8).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the image processing system as taught by Matsumoto '125 by adding extracting the attribute signal from the second image signal; performing predetermined image processing on one of the first image signal and the second image signal that are stored in the storage unit, based on at least one of the attribute signal stored and the attribute signal extracted as taught by Nakajima '437.

The motivation for doing so would have been to provide an image processing system in which high-speed processing and high quality of output images can be realized (*"...an object of the present invention is to provide an image processing system in which high-speed processing and high quality of output images can be realized."* Nakajima '437 at column 2, lines 17-20)

Therefore, it would have been obvious to combine Matsumoto '125 with Nakajima '437 to obtain the invention as specified in claim 18.

Regarding claim 20; Matsumoto '125 discloses the computer readable medium where the instructions further cause the computer to perform converting a resolution of the attribute

signal to a lower resolution. (*"In the example shown in FIG. 21, the information are switched according to the tile position with the same hierarchic layer, in such a manner that same information is not present in mutually adjacent tiles. Also the kind and amount of the inserted information are made larger for the higher resolution level and smaller for the lower resolution level."* column 11, lines 4-9).

Regarding claim 21; Matsumoto '125 discloses where the computer readable medium black-character identification signal indicating a black character area. ("*A step S320 detects the attribute of the image of each of the divided tiles. For example a tile containing a character or a fine line is defined as a character/fine line tile; a tile containing relatively important information such as a human face is defined as an important tile; a tile of which all pixels are of same data (or if only a very limited number of pixels is different in value) is defined as a single color tile;* column 7, lines 55-61).

6. **Claims 3, 4 & 9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto '125 in combination with Nakajima '437 as applied to claim 1above, and further in view of Nakajima '437.

Regarding claim 3; Matsumoto '125 and Nakajima '437 as modified does not expressly disclose a first compressor that irreversibly compresses one of the first image signal and the second image signal to store the image signal compressed in the storage unit; discloses a second compressor that reversibly compresses the attribute signal to store the attribute signal compressed in the storage unit discloses a first decompressor that decompresses the second

image signal compressed; a second decompressor that decompresses the attribute signal compressed, wherein the extractor extracts the attribute signal from the second image signal decompressed, and the image processor performs predetermined image processing on the second image signal decompressed, based on the attribute signal decompressed.

Nakajima '437 discloses a first compressor that irreversibly compresses one of the first image signal and the second image signal to store the image signal compressed in the storage unit; discloses a second compressor that reversibly compresses the attribute signal to store the attribute signal compressed in the storage unit discloses a first decompressor that decompresses the second image signal compressed; a second decompressor that decompresses the attribute signal compressed, wherein the extractor extracts the attribute signal from the second image signal decompressed, and the image processor performs predetermined image processing on the second image signal decompressed, based on the attribute signal decompressed (*"Such data is converted into FlashPix format and subjected to data compression, and is stored on an FD, MO or CD-R."* column 18, lines 21-23). See also (*"Thus, if the information storage medium reading device 22 is a device for reading image data from an FD or an MO or is a device for reading image data from a CD-R, the image processing engine 92 carries out image processings such as decompressing the compressed image data..."* column 18, lines 24-28) and (*"converting from the FlashPix format in order to obtain image data of a data sequence and a resolution (pixel density) suitable for recording an image onto the photographic printing paper 70, converting from the color space s-RGB (i.e., converting to image data of a color space suitable for recording the image onto the photographic printing paper 70 by the printer 34) and the like."* column 18, lines 28-35).

Matsumoto '125 and Nakajima '437 are combinable because they are from same field of endeavor of an image processing system (*"The present invention relates to an image processing system..."* Nakajima '437 at column 1, lines 7-8).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the image processing system as taught by Matsumoto '125 by adding a first compressor that irreversibly compresses one of the first image signal and the second image signal to store the image signal compressed in the storage unit; discloses a second compressor that reversibly compresses the attribute signal to store the attribute signal compressed in the storage unit discloses a first decompressor that decompresses the second image signal compressed; a second decompressor that decompresses the attribute signal compressed, wherein the extractor extracts the attribute signal from the second image signal decompressed, and the image processor performs predetermined image processing on the second image signal decompressed, based on the attribute signal decompressed as taught by Nakajima '437.

The motivation for doing so would have been to provide an image processing system in which high-speed processing and high quality of output images can be realized (*"...an object of the present invention is to provide an image processing system in which high-speed processing and high quality of output images can be realized."* Nakajima '437 at column 2, lines 17-20)

Therefore, it would have been obvious to combine Matsumoto '125 with Nakajima '437 to obtain the invention as specified in claim 1.

Regarding claim 4; Nakajima '437 discloses a compressor that irreversibly compresses one of the first image signal and the second image signal to store the image signal compressed in

the storage unit (*"Such data is converted into FlashPix format and subjected to data compression, and is stored on an FD, MO or CD-R."* column 18, lines 21-23); and a decompressor that decompresses the second image signal compressed (*"Thus, if the information storage medium reading device 22 is a device for reading image data from an FD or an MO or is a device for reading image data from a CD-R, the image processing engine 92 carries out image processings such as decompressing the compressed image data..."* column 18, lines 24-28); wherein the extractor extracts the attribute signal from the second image signal decompressed (*"converting from the FlashPix format in order to obtain image data of a data sequence and a resolution (pixel density) suitable for recording an image onto the photographic printing paper 70, converting from the color space s-RGB (i.e., converting to image data of a color space suitable for recording the image onto the photographic printing paper 70 by the printer 34) and the like."* column 18, lines 28-35).

Regarding claim 9; Nakajima '437 a controller that controls whether to store the attribute signal in the storage unit, depending on an image processing mode (*"The input device may be, for example, a scanner which reads images recorded on a photographic photosensitive material or some other image recording material and inputs the image data obtained by reading; a data reading device which reads and inputs image data stored on an information storage medium (a magnetic disk, an optical disk, a magneto-optical disk, a memory card, an IC card, or the like); a communications control device which receives and inputs image data which has been sent from another information processing equipment connected thereto by a communications line; or the like."* column 2, lines 46-56).

Allowable Subject Matter

7. **Claims 22 and 23** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARCUS T. RILEY whose telephone number is (571)270-1581. The examiner can normally be reached on Monday - Friday, 7:30-5:00, est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Twyler L. Haskins can be reached on 571-272-7406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Marcus T. Riley
Assistant Examiner
Art Unit 2625

/Marcus T Riley/
Examiner, Art Unit 2625

/Twyler L. Haskins/
Supervisory Patent Examiner, Art Unit 2625